0ARIZONA GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP PROGRAM
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL

PROJECT INFORMATION

Project Title: Price Canyon Habitat Improvement Project | **Project No. 10-514**

Region/GMU: Region 5/ Unit 29 | **HPC:** Southeast Arizona

Project Type: Mechanical Brush Reduction

Project Description:
The Price Canyon treatment is designed to convert manzanita dominated benches into more natural oak-savannah grasslands through mechanical mastication of brush species. Three previous treatment in similar vegetation and soils successfully improved wildlife habitat, watershed condition, water infiltration, and herbaceous production, while reducing hazardous fuels and visual obstructions. 500 of the 1000 acres in the project area have been treated.

Wildlife Species to Benefit: Coues whitetail, mule deer, javelina, Gould's turkey, Mearns quail, mountain lion, bear and various non-game species such as reptiles, neotropical birds and birds of prey.

Possible Funding Partners:

Implementation Schedule: Price Canyon
Beginning: November, 2009
Completed: April, 2012

NEPA Compliance: (if applicable)
Completed: Yes _X__ No __ __
Projected Completion Date:

PROJECT FUNDING

SBG Funds Requested: $ 40,000
Cost Share Funds: $ 60,000
Total Project Costs: $ 100,000

PARTICIPANT INFORMATION

Applicant: Coronado National Forest, Douglas Ranger District, Attention Ruben Morales
(please print)
Telephone: 520-364-6800

Address:
1192 W. Saddleview Rd.
Douglas, AZ 85607

AGFD Contact and Phone No.
(If applicant is not AGFD personnel) Gilbert Gonzalez

Coordinated with: AGFD, Private, USFWS, DHS, USFS | **Date: August 2010**

Applicant's signature: /S/ William Edwards | **Date:**

SEND COMPLETED APPLICATIONS TO:
Game Branch, 2221 W. Greenway Rd.
Phoenix, AZ 85023
mdisney@azgfd.gov

(revised 7-02-2007)

WAS PROJECT PRESENTED TO THE LOCAL HPC? YES _X__ NO ____

HAS PROJECT BEEN SUBMITTED IN PREVIOUS YEARS? Yes.
IF SO WAS IT FUNDED? No

NEED STATEMENT/PROBLEM ANALYSIS:
In 2004, approximately 9,000 acres on the Douglas Ranger District were identified as being dominated by extremely dense stands of manzanita (*Arctstaphylos pungens*). The majority of the project area reached the current chaparral dominated ecological state due three primary factors:

1. In the late 1800's and early 1900's, large-scale woodcutting occurred to supply the local mines and surrounding town sites with charcoal for smelters and general-purpose fuel wood. This resulted in the removal of most large trees from much of the accessible portions of the affected ranges. Most brush species were ignored however, and grew well without the competition from the mature trees.

2. For at least the past 140 years, fire has been largely absent from the ecosystem due to such factors as heavy grazing and active suppression efforts. Manzanita is a fire-successional species, and a single fire event tends to germinate manzanita plants. However, a regular fire interval tends to keep the species in check and maintain a more open, savannah-type appearance to the landscape. Some portions of the project area were burned a single time, and never re-burned, encouraging manzanita plants to germinate, and eventually dominate many sites.

3. In the 1950's management actions were taken to remove manzanita from some sites. The life expectancy of such projects is generally 25-30 years, and many of these areas are due for a scheduled re-treatment.

This condition is undesirable because:

- Current chaparral densities create marginal habitat for many wildlife species such as Gould's turkey and white-tailed deer, mule deer, and Mearn's quail.
- Current fuel loads present high risk to life, property, and fire fighter safety in the event of wildfires.
- Most of the ridges and mesas are in an undesirable ecological state (dense chaparral), which requires a disturbance to transition to a more desirable state (oak-savannah grassland).
- As chaparral density increases, herbaceous production decreases, leading to more bare soil, increased erosion, and increased water turbidity.
- Catastrophic wildfire in the chaparral type can burn intensely enough to create hydrophobic soils, reducing soil productivity, increasing erosion, and causing severe downstream flooding.
- Dense chaparral makes livestock management difficult, and prevents optimal livestock distribution.

- Thick vegetation hinders law enforcement efforts to detect, deter and apprehend narcotics and human smuggling activities.
- Dense shrub cover reduces quality of experience for hunters (less game, harder to see, difficult to retrieve)
- Manzanita is actively encroaching into open grasslands on the fringes of the surrounding many of the stands to be treated.

In an effort to restore these areas to a more natural oak savannah ecological state, a strategy was developed to use mechanical treatments to selectively mow manzanita stands, avoiding mature oak trees and leaving a mulch of persistent litter on the ground. Actual implementation would be broken into stages to minimize impacts on individual populations.

This treatment strategy has been successfully implemented in other portions of the Coronado National Forest in recent years. In the spring of 2006, approximately 1,000 acres were masticated west of Lochiel, immediately north of the international boundary with Mexico. In the winter of 2007, approximately 1,000 acres were masticated in the vicinity of Mowry. In this treatment, we used a fecon bullhog cutter which produced very favorable results and is the equipment we would most likely use in the future. In the winter of 2007/08 approximately 1000 acres south of Mowry were treated using a fecon bullhog cutter.

PROJECT OBJECTIVES:
The project objectives are:

- Convert approximately 1,000 acres in Price Canyon from dense chaparral to oak savannah; 500 acres have been treated in Price Canyon to date. The remaining acres are to be treated in fiscal year 2012.
- Improve habitat for species such as Gould's turkey, white tailed deer, mule deer, Mearn's quail, and numerous non-game species by creating large openings, increasing transitional edge, and improving grass and forb production
- Reduce the chances of catastrophic wildfire through redistributing fuel loads, thereby diminishing the wildfire threat to ranches in the vicinity.
- Improve watershed condition by increasing persistent litter, herbaceous production, and water infiltration.
- Improve quality of the hunting experience within treated and adjacent public lands, as measured by variety and abundance of game species and hunter access.

PROJECT STRATEGIES:
The prescription for the treatment includes the following details:

- Up to 1,000 acres of manzanita-dominated benches and ridges are to be treated with a Forest Service owned 330 Bobcat skidsteer with a Fecon Masticator head. 500 acres have been treated; the remaining acres will be deferred for treatment until fiscal year 2012 because of district priorities. District personnel will be utilized as operators in order for project to be as cost effective as possible.

- Areas to be treated will be limited to less than 30 % slope, and buffers will be left around all primary drainages.
- While manzanita is the target species, young oaks and junipers (less than 8 inch diameter) may also be removed.
- An oak savannah appearance is the desired end result.
- No seeding of herbaceous species should be required, as there is ample seed already in the soil.
- Mitigation measures identified in the wildlife specialist reports will be implemented.
- All identified cultural resource sites and land survey markers will be avoided.
- No work will be conducted in wet conditions to prevent soil compaction.
- Fire is not part of the initial prescription due to the quantity of highly flammable fuels and the vigorous germination that commonly occurs with controlled burns in manzanita dominated stands

The machinery to be used will be a rubber tired, 330 Bobcat with metal tracks and a front-mounted Fecon mastication attachment, which chops woody material into small pieces and scatters it on the ground, creating mulch ground cover. The masticator can cut to within 2 inches of the ground, minimizing soil disturbance. Rubber floatation tires with metal tracks attached allow the machine to work on rocky country, and minimize ground disturbance on softer soils. It can cut woody material up to eight inches in diameter. Since the mower is mounted on the front of the machine, it can be far more selective than many other mechanical treatment tools.

PROJECT LOCATION:
The project is located in T19S, R 30E, Sections 26, 35, and 36; and T20S, R30E, Sections 1, 2, and 3 on the Douglas Ranger District of the Coronado National Forest (see attached map).

LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and provide landowner's name):
The project is entirely on National Forest System lands on the Sierra Vista Ranger District of the Coronado National Forest.

IF PRIVATE PROPERTY, IS THERE A STEWARDSHIP AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT? N/A

HABITAT DESCRIPTION:
The project area can generally be described as chaparral transitioning to Madrean oak woodland on north aspects. Plains grasslands extend to the south of the project area. The project area is in the 16-20 inch precipitation zone and elevations range from 5,200 to 5,900 feet. The project area serves as marginal yearlong range for white tail deer, and potential expansion range for mule deer and Gould's turkey.

ITEMIZED USE OF FUNDS:

Requested funds will be used solely for implementation of the project (equipment maintenance, fuel, or operator wages). Previous projects utilizing contracted equipment and operators cost approximately $180 - 300 per acre. Recognizing that it is an expense we cannot sustain, we are exploring more economical methods of achieving the same goals. To that end, we intend to utilize forest service employees to operate the equipment in the Price Canyon project, thereby dropping the anticipated costs to approximately $100 per acre.

SOUTH MOWRY BRUSH REDUCTION
BUDGET ANALYSIS

COOPERATOR AND PROJECT COMPONENT	COST-SHARE DOLLARS AVAILABLE	GRANT DOLLARS REQUESTED
AGFD (Grant Funds) • 400 Acres masticated at $100/acre utilizing Forest Service equipment operators		$40,000
Coronado National Forest • 600 acres masticated at $100/acre utilizing Forest Service equipment operators • NEPA, biological and cultural clearance (complete) • Pre & Post project monitoring	$60,000 $22,000 $2,000	
Totals:	**$84,000**	**$40,000**
Project total cost: $124,000		
Ratio of match $/grant $: 2/1		

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:
Other cooperators include the Price Canyon Ranch which is the permittee for the grazing allotment that will be affected. They have modified their grazing rotation to facilitate the successful implementation of the project. They have also expressed strong support for the project as have some of the neighboring landowners. We are currently pursuing funding opportunities through the Department of Homeland Security for additional mastication treatments. They have been very pleased by the results of the previous three treatments and would like to assist in accelerating our implementation schedule. The Arizona Game and Fish Department and the US Fish & Wildlife Service have been involved in and supportive of the mastication projects from their inception. Representatives from these organizations have been

particularly impressed by the increased habitat diversity that has resulted from the first three treatments (see demonstrated results photos).

PROJECT MONITORING PLAN:
Multiple photo points will be established for pre and post treatment comparisons for long term monitoring, as was done for the previous treatments in 2006, 2007, and 2008. Some cultural resource sites have been identified to be avoided and these are being treated as control reference areas. Several research institutions such as the University of Arizona, Agricultural Research Service, and the Rocky Mountain Research Station have expressed interest in monitoring the effects of mastication treatments on numerous environmental components. Photo points have been established in the treatment area by district personnel.

PROJECT MAINTENANCE: Typically these projects have an effective life of 30-50 years depending primarily upon soil type, aspect and fire frequency. It is too early to predict if earlier maintenance will be required.

PROJECT COMPLETION REPORT TO BE FILED BY: Douglas Ranger District, Coronado NF.

WATER DEVELOPMENT PROJECTS (see attached worksheet): NA

TREE SHEARING (AGRA-AXE, PUSH) PROJECTS (see attached worksheet): Y

ARIZONA GAME AND FISH DEPARTMENT
TREE SHEARING WORKSHEET

PROJECT NAME: __Price Canyon Brush Reduction__

1) What is the estimated acreage of the project?

1,000 acres to be masticated within the Price Canyon project area.

2) How are the trees going to be cleared? (agra axe, chain saw, push):

Mechanical mastication using a Fecon masticator, mounted on a 330 bobcat skidsteer.

3) What is the estimated number of trees per acre?

Variable

4) Describe trees to be cleared (species, estimated diameter, single stem, multi-stem):

Manzanita is the target species, although young multi-stemmed oaks and junipers under 8" DBH will also be masticated. Mature oaks (greater than 8" DBH) will be avoided.

5) Describe terrain (slope, soil type, rocks, etc.)

Long benches and south facing side slopes will be treated. Equipment is limited to operating on slopes less than 30% grade, and will generally be operating on slopes that do not exceed 20%. Most of the project area is dominated by shallow loamy soils with a significant amount of cobble on the surface.

6) Please list any special land management status for the project site (i.e. Wilderness, National Park, National Monument, etc). If private land, list landowner.

The project area is entirely on lands administered by the Coronado National Forest. The Price Canyon Ranch is the grazing permittee on the affected allotment and support the project.

7) Please provide the following information about access to the proposed site:
Type of access (mark one): **_X__**2x4 vehicles ___4x4 only ___foot only**
**If foot access only: Distance in miles: Approx. hiking time:

Does access to this site require crossing private or tribal lands? ___YES _X__NO

Is the site relatively accessible for tree shearing equipment? __**X**___YES ___NO

Please describe any restrictions to public access: None

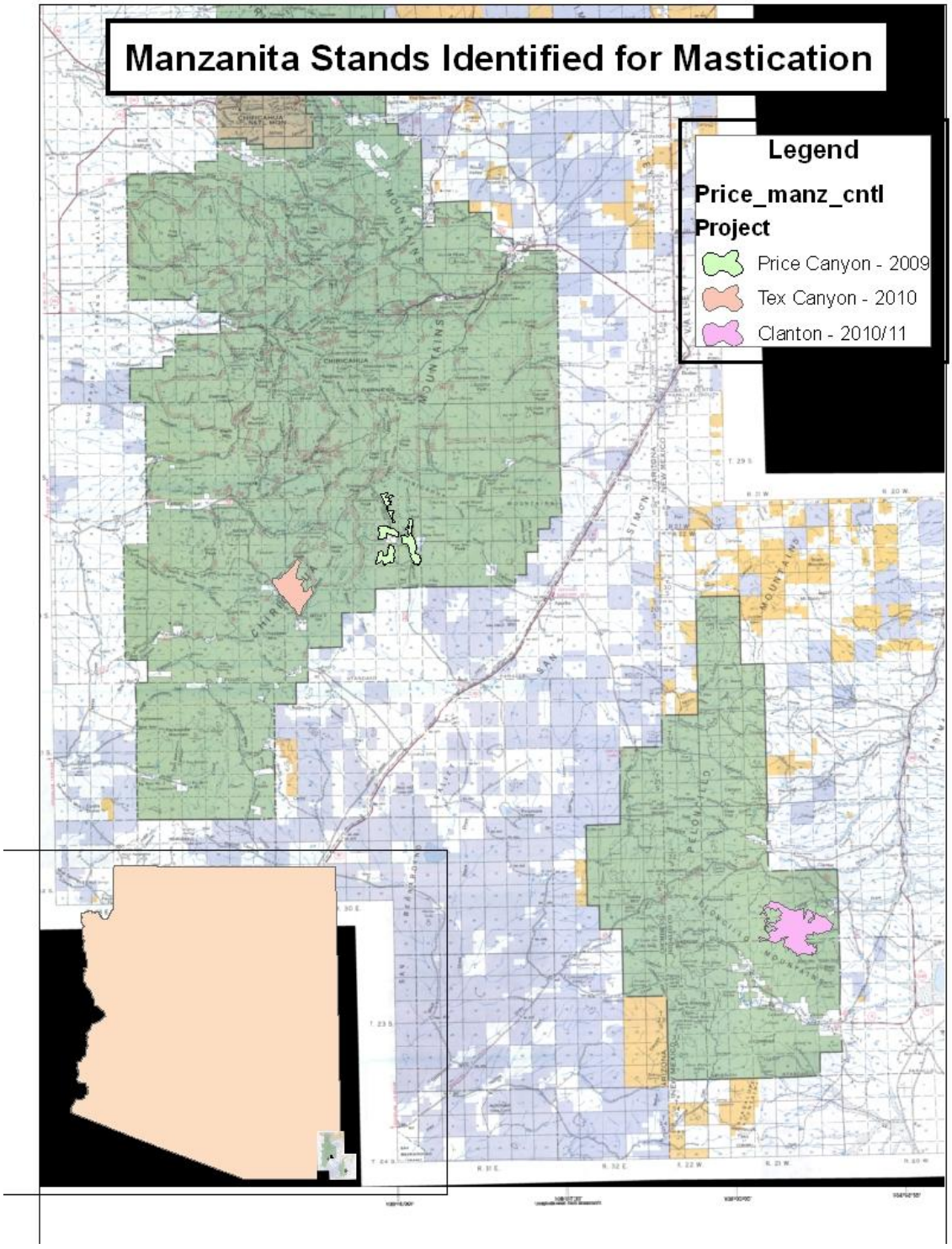

Figure 1. Manzanita stands identified for mastication on Douglas Ranger District, Coronado National Forest

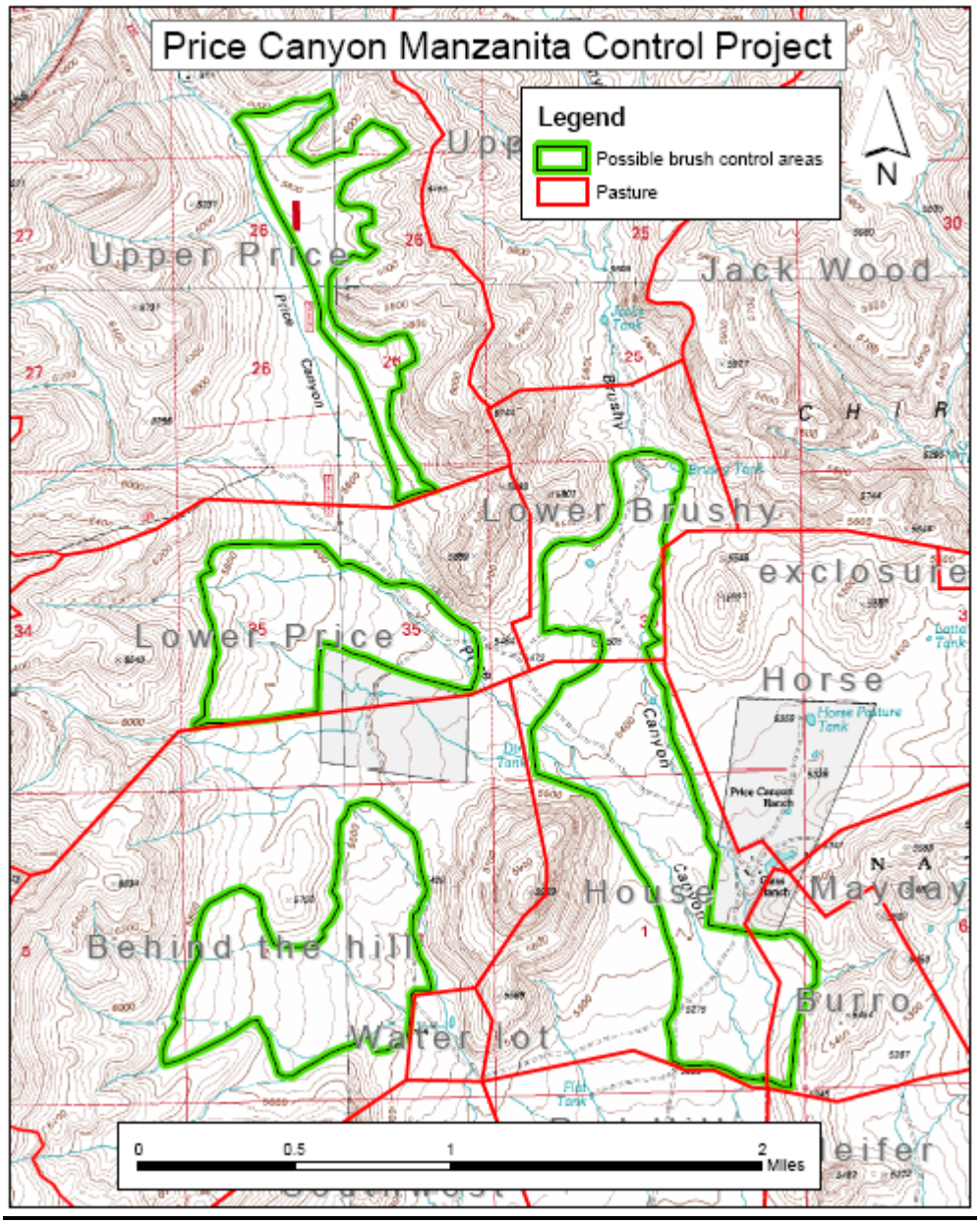

Figure 2. Price Canyon Project Area - Approximately 1,000 acres identified to be treated in FY 2010. 500 acres in southern portion of areas have been treated with remaining acres to be treated in 2012

DEMONSTRATED SUCCESS – Lochiel 2006

Figure 3. Photo point 1 pre-treatment; west of Lochiel AZ, January 2006

Figure 4. Photo point 1 post-treatment photo, September 2006

DEMONSTRATED SUCCESS – Lochiel 2006

Figure 5. Photo point 3 pre-treatment photo west of Lochiel, AZ, January 2006

Figure 6. Photo point 3 post-treatment photo, September 2006

DEMONSTRATED SUCCESS – Mowry 2007

Figure 7. Dunham photo point pre-treatment, January 2007. NE side of San Rafael Valley

Figure 8. Dunham photo point Post treatment, June 2007

DEMONSTRATED SUCCESS – Lochiel 2006

Figure 9. T2 photo point pre-treatment, January 2007. Near Apache Road east of Mowry

Figure 10. T2 photo point post-treatment, June 2007.

Price Canyon Project Implementation

Figure 11. December 2009

Figure 12. December 2009

Figure 13. Pretreatment: Vegetation typical of area,

Figure 14 Vegetation after treatment